

CASE STUDY: ETSU's Design Program Flourishes with Dimension

Product design is a key aspect of the applied research sector in the technology and geomatics department of East Tennessee State University (ETSU). Whether developing an automated bubble blowing apparatus that was tested in zero gravity by NASA or creating an automotive air filter adapter, crafting innovative designs and continuously improving prototypes is a primary educational and research tool for ETSU. "We like to focus on the process,

"Combining the durability of ABS with the power to immediately improve and repeatedly test models makes our Dimension system the quintessential problem solving tool."

— Bill Hemphill
Associate Professor
ETSU

when creating new products," said Bill Hemphill, associate professor at ETSU. "Having students make mistakes, redesign and rebuild is what education is all about."

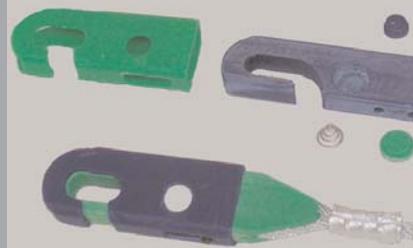
The Dimension Solution

Prior to choosing the Dimension system, ETSU experimented with other 3D printer parts, but found that they failed to withstand typical force applications. "Other systems we tried made it extremely difficult for students to create and field test their designs. The other models could not handle the appropriate forces," Hemphill recalled.

In one ongoing case, ESTU is creating a surgical simulator system designed for OBGYN training on over a dozen different surgical scenarios. The Dimension system has become integral in the process for designing and testing everything from multi-part molds for pouring simulated organs to fabricating structural members.

Going forward, the technology and geomatics department is beginning to work with the geologists at the nearby Gray Fossil Site. They are hoping to take the fossils found and replicate them using the Dimension system. This would allow them to share their findings with schools and other museums without putting the real fossils at risk.

"We envision it being especially useful for incomplete skeletons. With the Dimension system we should be able to replicate the animal based upon mirrored specimens and parts created from parametric data from similar finds, something we've never been able to do before," Hemphill added.



"The Dimension 3D printer has become a staple tool within our department, and will be integral to the overall education of students in our new product development curriculum," Hemphill stated.



Creating an advantage for students and schools.

Dimension 3D Printers provide an affordable, easy to use, easy to maintain, one-step process for students and instructors to explore concepts in durable ABS plastic. Dimension 3D Printers are helping high schools, technical colleges and universities extend their science, CAD and machine tool curriculums by enabling students to build functional models and see their ideas firsthand.

Innovative designers, engineers, architects and manufacturers consider prototyping a critical step of the design process. As the use of CAD and 3D printing increases throughout the design process, understanding this technology is critical for design students. With a Dimension 3D Printer, students and educators can now easily bring design ideas to life in ABS plastic - right from a CAD file.

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